What is claimed is:

1. A process for preparing a flue gas denitration catalyst, which comprises preparing a mixture containing titanium dioxide and tungsten trioxide; and having vanadium pentoxide supported on the surface of an extruded catalyst body or on a powder of the prepared mixture using a vapor phase method.

2. A process of claim 1, which further comprises having the resulting powder supported on the surface of a formed product.

3. A process of claim 1, wherein titanium dioxide and tungsten trioxide in the mixture exists in the form of a complex oxide thereof.

4. A process of claim 1, wherein a vanadium source in the vapor phase method is at least one compound selected from vanadium oxytrichloride, vanadium oxytribromide, vanadium pentachloride and vanadium dichloride.

5. A process of claim 1, wherein the mixture further contains silicon dioxide.

6. A process of claim 5, wherein titanium dioxide, tungsten trioxide and silicon dioxide in the mixture exists as a complex oxide thereof.

7. A process of claim 1, wherein the vapor phase method is a boiling bed system or moving bed system.

8. A flue gas denitration catalyst obtained by preparing a mixture containing titanium dioxide and tungsten trioxide, and then having vanadium pentoxide supported on the surface of an extruded catalyst body or on a powder of the prepared mixture using a vapor phase method.

9. A flue gas denitration catalyst of claim 8, which is obtained by further having the resulting powder supported on the surface of a formed product.

10. A flue gas denitration catalyst of claim 8, wherein titanium dioxide and tungsten trioxide in the mixture exists in the form of a complex oxide thereof.

11. A flue gas denitration catalyst of claim 8, wherein the supported amounts of vanadium pentoxide range from 0.4 to 5 wt.% based on the surface layer of the catalyst which has a thickness of 200 μm from its surface and range from 0.1 to 0.9 wt.% based on the total weight of the catalyst.

12. A flue gas denitration catalyst of claim 8, wherein vanadium pentoxide supported by the vapor phase method has a crystallite size of less than 10 nm as measured by X-ray diffraction.

13. A flue gas denitration catalyst of claim 8, wherein the catalyst body has a honeycomb shape.

14. A flue gas denitration catalyst of claim 9, wherein the formed product has a honeycomb shape.

15. A flue gas denitration catalyst of claim 8, wherein the mixture further contains silicon dioxide.

16. A flue gas denitration catalyst of claim 15, wherein titanium dioxide, tungsten trioxide and silicon dioxide in the mixture exists in the form of a complex oxide thereof.

17. A flue gas denitration catalyst of claim 9, wherein the formed product contains titanium dioxide, tungsten trioxide and vanadium pentoxide.

18. A flue gas denitration catalyst comprising titanium dioxide, tungsten trioxide and vanadium pentaoxide, wherein vanadium pentaoxide is supported on a carrier containing titanium dioxide and tungsten trioxide in the surface layer of the catalyst which has a thickness of 200 μm from its surface; wherein the supported amounts of vanadium pentoxide range from 0.4 to 5 wt.% based on the surface layer and range from 0.1 to 0.9 wt.% based on the total weight of the catalyst; and wherein vanadium pentoxide thus supported has a crystallite size of less than 10 nm as measured by X-ray diffraction.